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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,651	12/13/2000	Bart Dierickx	522-1729	8263

7590

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EXAMINER

LEE, EUGENE

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 04/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,651

Applicant(s)

DIERICKX, BART

Examiner

Eugene Lee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, and 7 thru 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Isogai et al. '093 B1. Isogai discloses (see, for example, FIG. 10) a substrate 101, charge accumulation region (non-carrier storing, carrier collecting region) 12, drain region (one doped or inverted region) 18, and overflow control region (non-carrier storing, planar current flow, carrier transport pathway) 6a. In regards to the limitation “radiation sensitive source of carriers in the substrate”, see, for example, column 26, lines 38-46 wherein Isogai states that when a high density light strikes the photodiode 1, excessive charge is generated.

3. Claims 1, 6, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemoto et al. '048. Takemoto discloses (see, for example, FIG. 2) a solid state imaging device (pixel structure) comprising a silicon body (substrate) 11, n-type diffused layer (non-carrier storing, carrier collecting region) 12, and n-type diffused layer (one doped or inverted region) 14.

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In column 1, lines 59-68, Takemoto states that the incidence of light 15 creates electron-hole pairs (radiation sensitive source of carriers in the substrate) in the n-type diffused layer 12 and Si body 11. A pn junction-capacitance (pinned or buried diode) 18 collects the electrons and the electrons are subsequently transferred to the n-type diffused layer 14. A silicon dioxide film (oxide layer and field oxide layer) 16' covers the substrate. A gate electrode 13 made of polycrystalline silicon (polysilicon cover layer) covers the n-type diffused layer 12. Regarding claim 9, see FIG. 4 and element 30.

Response to Arguments

4. Applicant's arguments filed 1/21/03 have been fully considered but they are not persuasive.

The limitation "non-carrier storing, carrier collecting region" is still disclosed by Isogai and Takemoto by virtue of the fact that the "non-carrier" is neither a hole or electron. On page 7, lines 9 and 10, applicant states that the word "carrier" may be construed as "holes" or "electrons". Therefore, since the regions 12 in Isogai and Takemoto only deal with holes and electrons, there can not be any storing of any "non-carriers". However, regions 12 do "collect" electrons as disclosed by Isogai and Takemoto respectively.

The limitation "non-carrier storing, carrier collecting region" may also be interpreted as the "non-carrier" being the hole and the "carrier" being the electron. Therefore, since the regions 12 in Isogai and Takemoto do not store holes or even try to collect holes but only collect electrons in the substrate that are generated by radiation, the limitation is still disclosed by Isogai or Takemoto

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The Examiner understands that “non-carrier storing” is intended to mean “a carrier that does not store”, however, by the way it is stated in the claims, the limitation “non-carrier” could be interpreted by either way above.

It should also be noted that the functional limitation ‘non-carrier storing, carrier collecting” does not introduce any **structural** limitations into the applicant’s claims and therefore does not structurally differentiate the claimed invention from Isogai or Takemoto.

A functional limitation must be expressed as a “means” for performing the specified function, as set forth 35 U.S.C. 112, 6th paragraph, and must be supported by recitation in the claim of sufficient **structure** to warrant the presence of the functional language. In re Fuller, 1929 C.C. 172; 388 O.G. 279.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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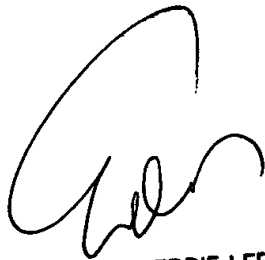
INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 703-305-5695. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Eugene Lee
April 3, 2003



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800